

CLAIMS

1. A connector for connecting a first rod and a second rod, comprising:
a housing component defining a first bore hole for receiving a portion of the first rod,
the first bore hole extending along a first longitudinal axis and a second bore hole for
5 receiving a portion of the second rod, the second bore hole extending along a second
longitudinal axis; and
a locking element for securing one of the first rod within the first bore hole and the
second rod within the second bore hole,
wherein the first longitudinal axis is configured to be offset in a sagittal plane from
10 the second longitudinal axis by a predetermined offset distance when the connector is
implanted in a patient.
2. The connector of claim 1, wherein the predetermined offset distance is variable.
- 15 3. The connector of claim 1, wherein the housing component comprises a first housing
component defining the first bore hole and a second housing component movably coupled to
the first housing component and defining the second bore hole.
4. The connector of claim 3, wherein the first housing component includes a first set of
20 external teeth on an outer surface thereof and the second housing component includes a
second set of external teeth on an outer surface thereof configured to interlock with the first
set of teeth at a plurality of discrete positions.
5. The connector of claim 3, wherein the second housing component includes a coupling
25 rod extending in a direction that is transverse to the second bore hole and the first housing
component includes a coupling hole configured to receive the coupling rod.
6. The connector of claim 5, wherein the coupling rod includes a first set of teeth on an
outside surface and the coupling hole includes a second set of teeth on an inside surface
30 configured to interlock with the first set of teeth.
7. The connector of claim 3, further comprising a clamping mechanism for securing the
first housing component in a selected position relative to the second housing component.

8. A connector for connecting a first rod and a second rod, comprising:

a housing component defining a first bore hole extending along a first longitudinal axis for receiving a portion of the first rod and a second bore hole extending along a second longitudinal axis that is non-parallel with the first longitudinal axis for receiving a portion of
5 the second rod; and

a locking element for securing one of the first rod within the first bore hole and the second rod within the second bore hole.

9. The connector of claim 8, wherein the second longitudinal axis is adjustable relative
10 to the first longitudinal axis.

10. The connector of claim 8, wherein the housing component comprises a first housing component defining the first bore hole and a second housing component movably coupled to the first housing component and defining the second bore hole.

11. The connector of claim 10, wherein the second housing component includes a coupling rod extending in a direction that is transverse to the second bore hole and the first housing component includes a coupling hole configured to receive the coupling rod.

12. The connector of claim 8, further comprising a spherical bushing in said first bore hole for adjusting an angle of the first rod relative to the second longitudinal axis.

13. The connector of claim 8, wherein the locking element comprises a top-loading set screw for securing both the first rod and the second rod.

14. A connector for connecting a first rod and a second rod, comprising

a first housing component defining a first bore hole for receiving a portion of the first rod; and

a second housing component coupled to the first housing component and defining a
30 second bore hole that is movable relative to the first bore hole for receiving a portion of the second rod.

15. The connector of claim 14, wherein the second housing component is movable relative to the first housing component to move the second bore hole relative to the first bore hole.

5 16. The connector of claim 15, wherein the second housing component is rotatable relative to the first housing component.

17. The connector of claim 15, wherein the second housing component is laterally movable relative to the first housing component.

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18. The connector of claim 15, wherein the second housing component is movable in a vertical direction relative to the first housing component.

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19. The connector of claim 14, further comprising a spherical bushing in said second bore hole for moving the second bore hole to adjust an angle of the second rod relative to the first rod.

20. The connector of claim 14, wherein the first bore hole is configured to receive a cervical rod and the second bore hole is configured to receive a thoracic rod.

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21. A method of connecting a first rod to a second rod, comprising the steps of:
inserting the first rod into a first bore hole of a rod connector;
inserting the second rod into a second bore hole of the rod connector; and
moving the second bore hole relative to the first bore hole.

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22. The method of claim 21, wherein the step of adjusting comprises adjusting an angle between the first bore hole and the second bore hole.

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23. The method of claim 21, wherein the step of adjusting comprises adjusting a distance between the first bore hole and the second bore hole.

24. The method of claim 21, further comprising the step of:
coupling the first bore hole relative to the second bore hole after inserting the first and second rods.

25. The method of claim 21, further comprising the step of implanting the rod connector.

26. The method of claim 25, further comprising the step of adjusting the second bore hole
5 relative to the first bore hole.

27. A connector for connecting a first rod and a second rod, comprising:

a housing component defining a first bore hole for receiving a portion of the first rod,
the first bore hole extending along a first longitudinal axis and a second bore hole for
10 receiving a portion of the second rod, the second bore hole extending along a second
longitudinal axis; and

a locking element for securing one of the first rod within the first bore hole and the
second rod within the second bore hole,

wherein the first longitudinal axis is configured to be offset from the second
15 longitudinal axis in a first plane by a first predetermined offset distance and by a second
predetermined offset distance in a second plane that is perpendicular to the first plane.

28. A connector for connecting a first rod and a second rod, comprising:

a housing component having a top surface, a bottom surface, a front surface and a
20 back surface, the housing component defining a first bore hole for receiving a portion of the
first rod, the first bore hole extending from the front surface to the back surface along a first
longitudinal axis and a second bore hole for receiving a portion of the second rod, the second
bore hole extending from the front surface to the back surface along a second longitudinal
axis; and

25 a locking element inserted through the top surface for securing one of the first rod
within the first bore hole and the second rod within the second bore hole,

wherein the first bore hole is offset from the second bore hole, such that said first bore
hole is closer to the bottom surface of the housing than the second bore hole